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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/080,961 | 10/22/2001 | Clark E. Lubbers | P01-3905 | 1588 |

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EXAMINER

PORTKA, GARY J

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2188

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

10/080,961

Applicant(s)

LUBBERS ET AL.

Examiner

Gary J Portka

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>October 18, 2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-7 are presented for examination.

Priority

2. It is acknowledged that priority is claimed to US Application No. 09/872,597, but the transmittal letter which accompanied this application did not specify whether this is a division, continuation, or continuation-in-part.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on October 18, 2002 was considered by the examiner.

Specification

4. The disclosure is objected to because of the following informalities: Fig. 16 is not described either at the brief description (page 11) or elsewhere in the specification. It is suggested that the brief description is similar to that of Fig. 14 (para. 0034) and the further description similar to that of Fig. 14 (para. 00105).

Appropriate correction is required.

Claim Objections

5. Claims are objected to because of the following informalities:
 - a. Claim 1 recites at lines 10 and 11 of the claim "LMAP" (2 places); it is suggested for clarity that these be changed to "LMAP(s)" as described at para. 0091, or as "LMAP structure" as described at para. 0090, and further since "LMAP pointers" at line 15 of the claim indicates the possibility of plural LMAPs. At line 12 of the claim it is

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suggested to add "LMAP(s)" after "disk" since the pointers are from the LMAP(s) of the logical disk (see para. 0091; also in claim 2).

b. Claim 7 recites at line 6 of the claim "the logical disk" which lacks antecedent basis. At line 9 of the claim "the LMAPs includes" should be grammatically corrected. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites at lines 14-15 of the claim populating the predecessor L2MAP with LMAP pointers "from the predecessor logical disk". Since at this point the predecessor logical disk does not contain LMAP pointers, this has not been enabled. The quoted language should be changed to "to the predecessor LMAP records" in accordance with para. 0091. Claims 2-6 incorporate this limitation by dependency.

8.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites at lines 17-20 of the claim setting share bits for the successor logical disk, and setting share bits for the successor PLDMC. Claim 6 recites clearing share bits for the successor logical disk and successor PLDMC. It appears from the specification at paras. 0091-0092 that the only share bits disclosed are those in the LMAP entries of the logical disk (and PLDMC), and thus it is unclear whether the setting/clearing of bits for the PLDMC is different from, or the same bits, and the setting/clearing of bits for the logical disk. Claims 2-5 incorporate this limitation by dependency.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claim 7 is rejected under 35 U.S.C. 102(e) as being anticipated by Williams et al., US 6,715,050 B2.

13. As to claim 7, Williams discloses the computer-based storage system, including pool of physical storage divided into physically addressable locations (disk 140), , and logical disk structure for mapping locations within a logical disk (a file) to physically

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addressable storage locations, including logically addressable Rstores (extents or allocation units, see col. 3 lines 32-38), and logically addressable LMAPs (extent maps plus storage keys of the memory controller, see col. 3 lines 51-54, col. 4 lines 3-5) including memory locations (snapshot mask) indicating a segment is shared with a successor logical disk (bit set indicating the extent is a snapshot copy) and with a predecessor logical disk (bits set indicating there are other copies, col. 4 lines 25-35). It is further noted that the Rstores and LMAPs are logically addressable to the extent claimed since they are accessed via the file directory and extent maps using logical addresses.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent No:

6,214,140 - Managing hierarchically organized information (virtual copies).

NB9404509, IBM Technical Disclosure Bulletin, "Microkernel Extension for Cloning", April 1994 – consistency in snapshots using shared bits.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary J Portka whose telephone number is (571) 272-4211. The examiner can normally be reached on M-F 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571) 272-4210. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Gary J Portka
Primary Examiner
Art Unit 2188

November 23, 2004